

## **Inca Suspension Bridges**

*Isabel Espino de Valdivia*  
*Allderdice High School*

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### **1. Overview**

Since ancient times, humans have built bridges to cross gorges, rivers, and conquer mountains. From the mountains in Japan to the Andes in Peru, humans have used these bridges to unify nations, form empires and connect worlds. According to a *Heike* legend, after losing the war to the *Genji* Clan in 1012, the *Taira* Samurai fled to the remote area of Iya hidden mountains in Tokushima Prefecture. To cross the 200 meter high cliff and conquer the mountains to escape, the *Taira* samurai built a suspension bridge made out of *Katzura* tree ( *Cercidiphyllum japonicum*) vines that they could cut at anytime to protect themselves from their enemies. “*Iya katzura Bashi*,” a national folkloric property, rebuilt every three years, is a 45-meter-long and 2-meter-wide suspension bridge with a height of 14 meters from the water level.

At the same time, on the other side of the World, native Peruvians built suspension bridges made out of woven grass (*ichu* grass) and other fiber materials. These bridges

made it possible for the Incas to conquer new territories and construct a national road (15,000 miles of road) to unify and expand their empire.

In the 16<sup>th</sup> century 200 of these suspension bridges still remained, some of them with spans of 150 feet. The last bridge of this kind, called *Qeswachaka*, still remains over the Apurimac River, near the village of Huinchiri (180 km. South East of Cuzco). Every year the Huinchiri village people rebuild the bridge in a communal effort.

## **2. Rationale**

When high school students are questioned about Peru they are familiar with Machu Picchu but they know very little about the Inca builders of Machu Picchu and the technology behind this architectural marvel of the ancient world.

Carlos G. Mann has provided a great insight on the might of the Inca Empire: “In 1491 the Inka ruled the greatest empire on earth. Bigger than Ming Dynasty China, bigger than Ivan the Great’s expanding Russia, bigger than Songhay in the Sahel or powerful Great Zimbabwe in the West Africa tablelands, bigger than the cresting Ottoman empire, bigger than the Triple Alliance (as the Aztec empire is more precisely known), bigger by far than any European state, the Inka dominion extended over a staggering thirty-two degrees of latitude—as if single power held sway from St. Petersburg to Cairo.” (1)

When Francisco Pizarro and the Conquistadors arrived to Peru in 1535 they expected to find an inferior culture, instead they were mesmerized not only by the gold and the riches of the Incas but also by the grandiosity of their architecture and the amazing technology of their agricultural terraces, roads and bridges. Spanish chroniclers recorded these discoveries and impressions and we are able to read about them as if we were witnessing these fascinating findings today. Since these chronicles registered the encounter and the clash between Western and Native American civilizations, their value is enormous

and they constitute an important part of this project. I have also included Peruvian chroniclers to balance the political points of view.

The purpose of this unit is to introduce high school students to the Inca civilization through its technology, especially fiber and stone technology the Incas used to build suspension bridges in the gorges of the high Andean rivers and mountains.

This unit is designed to reach Intermediate low and Intermediate mid (according to the American Council on the Teaching of Foreign Languages Proficiency Guidelines) students of Spanish and it involves not only reading and writing in Spanish but also a research project including new presentational technology tools such as *prezi*, and collaborative online technologies, such as *microblogging* with *Twitter*.

### **3. Background:**

#### **Andean Civilizations and the Inca Empire**

The Inca culture was the result of years of multiple layering of pre Columbian cultures that provided the Inca with an array of knowledge they used to build its empire. Peru, the cradle of most Andean cultures, is a place where new archeological findings happen every year. One of the most important discoveries of the last few years is the culture of Caral, a monumental city built around 2700 BCE, nearly 5000 years ago. This civilization developed at the same time as Egypt, India, Mesopotamia and China and 1500 years ahead of the Maya. The people at Caral built an urban complex of 20 pyramids, sunken plazas and residential areas in an area of 66 hectares. Their civilization was based on the production and manufacture of cotton for mass-fishing nets and clothing that they traded with other farming and fishing communities. Its organization model influenced the development of cultures such as Sechin, Chavin, Moche, Huari, Chimu and later the Inca.

According to the official Caral Website “Knowledge of astronomy, geometry, arithmetic, biology, etc., found its application in the preparation of the calendar and

prediction of the weather, in the construction of public works, soil management, the improvement of crops, medicine, public administration, and the manufacture of artifacts for ceremonial and luxury purposes. The forms of social and political organization of the Caral-Supe populations were projected beyond space and time, and set the bases of the structures that would later be seen in the political states of the Central Andes.” (2)

After Caral, Andean Cultures developed in a complex history and the following is a time line based on studies done by Luis Lumbreras (3) to summarize the most important pre-Columbian cultures data known to this day.

Period	Dates	Cultures
CERAMIC		
Tawantisuyo Empire	1430 AD – 1532 AD	Incas
Regional States	1200 AD - 1470 AD	Huari, Chimu, Chincha, Chanka Confederation
Huari Empire	800 AD - 1200 AD	Huari Tiwanaku
Regional Development	100 AD - 800 AD	Moche, Nazca, Lima Tiwanaku
Formative	900 BC - 200 AD	Chavin, Vicus
PRECERAMIC		
Archaic	4000 BC-1200/1800BC	
Lithic	1500 BC – 4000 BC	<b>Caral-Supe</b>

The Inca, a tribe that settled in the highlands of Cusco, Perú around 1200 CE began conquering and expanding its territory around 1438 CE with *Pachakuti* until the arrival of Francisco Pizarro and the Conquistadors in 1534. The Inca Empire, also called, *Tawantinsuyu* or Land of the Four Quarters, extended from Ecuador to Chile and it had a central government with the *Sapa Inca* as the supreme ruler of the four quarters:

*Chinchay Suyu* (NW), *Anti Suyu* (NE), *Kunti Suyu* (SW), and *Qalla Suyu*(SE). These four quarters met at the center in the capital, Cusco. Each *Suyu* had a high administrator or *Apo* and was also divided into provinces of twenty households each. Below each *Apo* were two *curacas* or governors, each in charge of ten thousand households. Below them were two governors in charge of five thousand households, down to two governors that managed only one hundred households. This decimal organization made it possible to administer such an extensive territory and also take care of the details. To keep records they used Khipus. A Khipu was a long rope made of wool or cotton from which dangled smaller strings of different lengths and colors. Each unit of 1, 10, 100 and 1000 was represented with a special kind of knot. The Khipu readers called *Quipucamayoc* were educated in special schools and were also in charge of preserving the Khipu in Cusco.



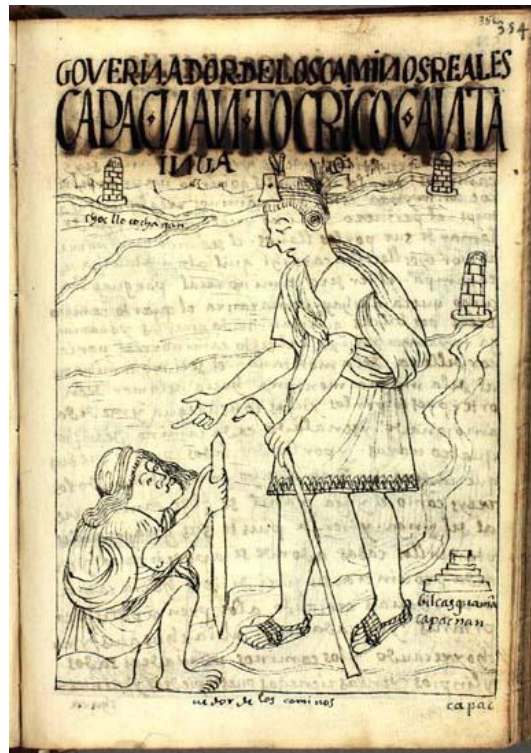
“Chief Accountant” Guaman Poma de Ayala:362

Around the 1530s, the Inca occupied a territory of about two million km<sup>2</sup> (772,204 sq mi) with a population of twenty million. Quechua, still spoken today in the

Andes of Peru, was the lingua franca of the inhabitants of the Tawantisuyu Empire. The Inca had a state wide labor tax called “*mita*”. which means “turn of labor” in Quechua. Male members of each household worked in agricultural fields or building roads for the empire for a certain length of time each year. Another important source of labor were the *mitmaq*, people the Inca subjugated and forcibly resettled. The *Mita* and *Mitmaq* permitted the Inca to build an extraordinary Road system.

### **Inca Road or *Qhapaq Ñan***

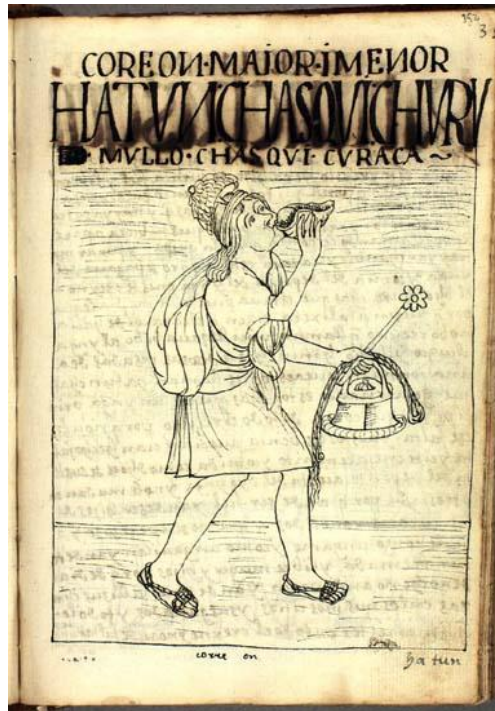
The Inca built a highway of at least 40,000 kilometers that spanned from Quito, Ecuador, to Santiago de Chile in Chile, connecting three million square kilometers of territory. This highway had two main roads from North to South, one for the highlands called *Chinchay suyu* and the other for the pacific coast called *Chocllococho* and in between they had connecting roads. The *Qhapaq Ñan*, made for pedestrian traffic, was fundamental to build and extend the *Tawantinsuyu* Empire. Some parts of the road were built based on pre-Inka roads and connected cities or zones of dense population. The following Guaman Poma drawing depicts the *Qhapaq Ñan* (royal road), the *Chocllococho* (road to the Pacific coast), the *tupu* or Inca measurement (7 or 8 kilometers) and an Inca Road Governor:



“Governor of the Royal Roads” Guaman Poma de Ayala: 356

Every twenty kilometers (a day’s walk), they constructed buildings called *Tampu*, which served as lodgings and had store facilities for food, clothing, firewood, and so on. Sometimes the Inca officials would conduct administrative business there. As with the road, the *tampu* were maintained and repaired by the local communities as part of their tribute to the empire.

The Inca Road also supported a postal system using *Chasqui* (highly trained runners) who would deliver messages and special objects or delicacies for the Inca through a system of relayed runners. The *Chasqui* carried a *pututo* (a shell trumpet) and a *Khipu* to transport the message that could be delivered from Ecuador to Cusco within a week (140 miles a day). The Inca mail service was not surpassed in speed until the 19<sup>th</sup> century.



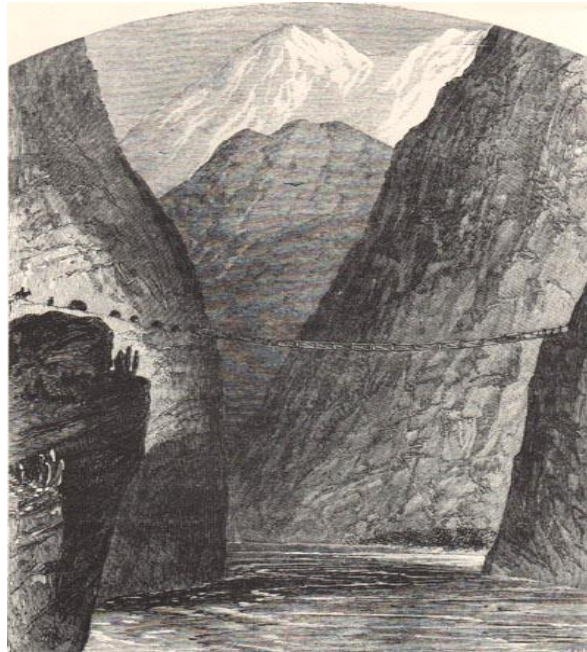
“Couriers” Guaman Poma de Ayala: 352

In conclusion, the Inca Road had several functions: transportation, administration and postal system. The Inca also built their roads for military purposes to access the empire frontiers and their fortresses; some roads also provided transportation to high altitude sanctuaries and religious sites.

### **Inca Suspension Bridges**

To carry the Inca Road across the rugged terrain and the deep gorges of the Andes, the Incas built some of the most impressive fiber suspension bridges in the history of mankind. John Ochsendorf (4) estimates that they may have constructed between 200 and 1000 bridges, however it is now impossible to know for sure how many bridges there were. Since Andean people had an advanced textile and weaving technology, the building of fiber suspension bridges was their natural solution to the problem of water barriers and deep canyons, such as the Apurimac river canyon. The terrain in the Andean mountains is rugged and vertical, full of gorges and deep canyons. The Incas wove the *ichu* grass or other plant materials into strings, the strings into cords and the cords into ropes that

became the cables for the suspension bridges. The Incas anchored these massive cables to stone abutments on either side of the canyons. Three of these cables reinforced with plaited branches formed the floor of the bridge. The suspension bridge over the Apurimac, also called *Huacha Chaka* is one of the most famous. It had a single span of 148 feet, 118 feet above the river. They accessed the bridge through a tunnel drilled inside the mountain. The bridge survived until the 19<sup>th</sup> century when George Squier arrived in Peru and published the following picture on his book: *Incidents of Travel and Exploration in the land of the Incas*



George Squier's illustration of the Suspension Bridge over the Apurimac (1877)

This illustration inspired Hiram Bingham to travel to Peru and later discovered Machu Picchu. He wrote:

“In the foreground is a delicate suspension bridge which commences at a tunnel in the face of a precipitous cliff and hangs in mid-air at great height above the swirling waters of the great speaker. In the distance, towering above a mass of stupendous mountains, is a magnificent snow-capped peak. The desire to see the Apurimac and experience the thrill of crossing that bridge decided me in favor of an overland journey to Lima.” (5). This bridge

was also the inspiration for Thornton Wilder's "The Bridge of San Luis Rey."

### **Suspension Bridge Structure and Materials**

Each bridge had three parts: Stone abutments, the fiber cables and a walkway or floor with vertical ties. Bauer (6) argues that some bridges also had stone towers that later were replaced with stone and mortar construction.



Suspension bridge over the Rio Pampas (Squier 1877: 558)

The masonry abutments were a series of horizontal beams where the rope cables were wrapped around. Garcilasco de la Vega reported in 1604 on the cable-making techniques. The fibers were braided into ropes of the length necessary for the bridge. Three of these ropes were woven together to make a larger rope, and three of them were again braided to make a still larger rope, and so on. The thick cables were pulled across the river with small ropes and attached to stone abutments on each side. Three of the big cables served as the floor of the bridge, which often was at least four to five feet wide, and two others served as handrails. Pieces of wood were tied to the cable floor. Finally, the floor was strewn with branches to give firm footing. More branches and pieces of wood were strung to make walls along the entire length of the bridge. The side covering, one chronicler said, was such that "if a horse fell on all fours, it could not fall off the bridge. Inca Bridge technology was not surpassed until metal bridges were constructed in the 19<sup>th</sup> century, three hundred years after the fall of the Inca empire.



Governor of the Bridges Guaman Poma: 358

As seen on the illustration above, the Incas had a “governador de puentes” as the person in charge to repair the bridge and charge a toll to cross the bridges. He lived next to the bridge and kept ready-made cables to exchange for damaged ones.

Ichu grass (*Stipa ichu*) is one of the materials used to build the ropes for the Inca suspension bridges. A member of the genus *Stipa ichu*, is also known as Peruvian feather grass. Among other plants used are: Llocque (*kageneckia lanceolata*), willow (*Salix humboldtiana*), chachacomo (*Escallonia resinosa*), and chuchau (*Fourcoroya andina*). Regal (7) also indicates braided animal skins as one of the materials.

Keshawaka, located over the Apurimac river near Huaichiri, Cusco, is the only surviving Inca suspension bridge in the 21<sup>st</sup> century. It is rebuilt every year in June in a community festivity that last three days. The first day they make the ropes of local grass or ichu, the second day the old bridge is cut and the new ropes are installed and the third day they build the roadway and hand rails. This festivity had been documented by NOVA (8)

and also by The Instituto Nacional de Cultura in Cusco (9) and it shows ancient social, labor, and religious Inca culture practices.

Based on the Keshawaka bridge, John Ochsendorf (4) conducted a rope study designing the following equation:

$$\begin{aligned} & \text{(# of cords)(cord strength)(cos twisted angle)} \\ & (72 \text{ cords})(117 \text{ lbs})(\cos 45^\circ)^2 = 4200 \text{ lbs} \end{aligned}$$

Then, he carried out a cable load test (catastrophic failure). The load before failure was measured as 4020 pounds in contrast with a prediction of strength of 4200 pounds (less than 5% difference). He concluded that since the larger bridges have been reported to carry large armies and animals, the cables must have required a strength up to 50,000 lbs.

### **The Bridges and the Chroniclers**

The surprise and amazement the Spanish conquistadors felt when they discovered these bridges was recorded on their chronicles. Pedro Cieza de León, Bernabe Cobo, Luis Betanzos, among many other Spanish Chroniclers wrote about Inca suspension bridges. The bridges confronted the Spanish conquistadors with an unknown technology. They were built with the concept of tension that was the opposite of the tradition of Roman compression bridges built in Spain. Native Peruvian chroniclers, such as Guaman Poma de Ayala and Inca Garcilaso de la Vega also wrote about the suspension bridges on their books.

#### **4. Unit Objectives: Inca Suspension Bridges**

In this curriculum unit, I will focus on one of the Incas's biggest accomplishments in fiber technology: Suspension Bridges.

4.1 Students will learn about the practices and perspectives of the Inca society when building these suspension bridges by employing ancient community labor practices like the “mita” system.

4.2 Students will also be able to advance their communication skills in Spanish by reading actual Spanish and native Peruvian chroniclers writings of the time period.

4.3 Students will make connections to other disciplines, such as Physics and Geometry when researching concepts of tension and spans in fiber suspension bridges.

4.4 Students will use their critical thinking skills to realize the outstanding contributions the Andean civilizations and the Incas made to the human race.

## **5. Strategies**

All the topics, lessons and the activities will be integrated around the *Inca Suspension Bridges* theme. Students will learn the basic linguistic material to discuss, read and write about the topics in Inca technology and Suspension Bridges. Students will read authentic Chronicles in old Spanish to extract information on the Inca civilization and its bridge technology. In addition, they will compare old and modern Spanish through the Chronicles of Pedro Cieza de León, Ferdinand Cobo, Garcilaso de la Vega and Guamán Poma Ayala. Then students will work collaborative using *microblogging* tools such as tweeter in Spanish and prepare a presentation on their findings using Power Point, Prezi or any other presentational software. Finally students will compare, contrast and express opinions about information gathered on Inca Technology and Suspension Bridges.

## 6. Classroom Activities

### Day 1:

Students will brainstorm all their knowledge about the Inca. Then they will watch the video **Ancient Inca** in Spanish and work in a **think-pair share activity** to brainstorm main vocabulary to describe and summarize the main ideas on Inca technology and engineering. Later students will participate in classroom discussion to share their work. After the discussion, they will work in pairs to complete an experience chart (see appendix i) in Spanish. Assessment will be based on completion of experience chart.

### Day 2:

To review information and new vocabulary, students working in groups will participate in a “Inca quiz show” in Spanish. A volunteer will become the quiz show host and he/she will ask questions based on the video and the experience chart. The group who answers most questions will be the winner. A variety of pictures will be added to improve comprehension. At the end of this activity, students will have a general idea of the Inca civilization, history, geography and major accomplishments. Assessment will be based on participation and task performance.

### Day 3:

Students will view video clips from the “Puente Colgante Inca” to learn about the Suspension Bridge *Queswachaka*. On this video, students will be able to observe the building of the bridge step by step starting with the collection and preparation of the *ichu* grass to create the ropes. Students will also be able to observe the labor practices and community work the Inca people have kept for centuries. The annual construction of this suspension bridge is done over the course of three days and it is also a festivity where native Andean people combine religious, work and social practices. Students will describe

and discussed actual cultural practices related to this festivity and will write an descriptive essay in Spanish summarizing main concepts on Inca cultural practices observed on this festivity. Assessment will be based on **essay rubric** (see appendix ii).

**Day 4-6:**

Students will research in groups related topics to Inca Suspension bridges, such as: structure, geometry, materials, geographical locations and archeological findings. At the end of the research, students will become “experts” on their topics, compile their findings and prepare a power point, i-movie or prezi presentation to share their knowledge with the class. Students will also use collaborative tools to develop their project, such as wikis and twitter. The project will be assessed following the **presentation rubric guidelines** (see appendix iii)

**Day 7:**

Students will take part on a Field Trip to Frick Park to collect suitable materials to weave an Inca style rope.

**Day 8:**

Students, following directions from Inca Garcilaso de la Vega, will weave an Inca style rope. Assessment will be based on task completion.

**Expansion Activities:**

**El Baúl del Cronista (The Chroniclers’ treasure chest):**

Students in groups will research an assigned Chronicler, his biography and a selection of important pieces of writing the chronicler recorded on suspension bridges. They will bring a “baúl” (chest) with all the necessary elements, props, illustrations, maps, and costumes and use creative drama to enact the life of the chronicler and his experiences with suspension bridges in Peru.

Assessment will be based on creative drama rubric (see **appendix iv**).

## 7. References

1. Mann, Charles C. 2005. 1491 New York: Alfred A. Knopf 64-65
2. Caral Official Website: Information on Caral (Norte Chico) Civilization  
[http://www.caralperu.gob.pe/principal\\_ing.htm](http://www.caralperu.gob.pe/principal_ing.htm)
3. Lumbreras, Luis G. 1974. Peoples and Cultures of Ancient Peru translated by Betty J. Meggers. Washington DC: Smithsonian Institution Press
4. Engineering in the Andean Mountains: History and Design of Inca Suspension Bridges Perf. John Ochsendorf. The Library of Congress Webcasts. 08 Dec. 2005. 04 Mar. 2009  
<[http://www.loc.gov/today/cyberlc/feature\\_wdesc.php?rec=3839](http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=3839)>.
5. Bingham, Hiram. 1922. Inca land –Explorations in the Highlands of Peru Boston and New York: Houghton Mifflin Company 1
6. Bauer, Brian S. "Suspension Bridges of the Inca Empire." Andean Archeology III: North and South. New York: Springer, 2006. 468-91.
7. Regal, Alberto. 1972. Los Puentes del Inca en el Antiguo Perú. Lima: Imprenta Gráfica Industrial. 29-33
8. Secrets of Lost Empires: Inca. Dir. NOVA. DVD. WGBH Boston, 2006.
9. Puente Colgante Inca Queswachaka. Prod. Instituto Nacional de Cultura. Perf. Proyecto Qhapag Ñan. 14 Mar. 2009. 10 May 2009

## 8. Annotated Bibliography

Ancient Inca. Dir. Schlessinger. DVD. 2004.

Journey into the Andes Mountains to discover the secrets of the ancient empire of the Inca.

Bauer, Brian S. "Suspension Bridges of the Inca Empire." Andean Archeology III: North and South. New York: Springer, 2006. 468-91.

A scholarly chapter on Suspension Bridges. Includes illustrations and photos.

Engineering in the Andean Mountains: History and Design of Inca Suspension Bridges

Perf. John Ochsendorf. The Library of Congress Webcasts. 08 Dec. 2005. 04 Mar. 2009  
<[http://www.loc.gov/today/cyberlc/feature\\_wdesc.php?rec=3839](http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=3839)>.

John Ochsendorf discussed engineering in the Andes mountains. In this difficult terrain, the engineers of the Inca Empire built suspension bridges of natural fiber to span wide canyons and bridges.

### *Inka Bridges*

<http://www.nytimes.com/2007/05/08/science/08bridg.html>

An article in the New York Times with information on the suspension bridges and the MIT course on ancient technology.

Lumbreras, Luis G. 1974. *Peoples and Cultures of Ancient Peru* translated by Betty J. Meggers. Washington DC: Smithsonian Institution Press

A text for a course in Andean Archeology, written for students for a panoramic view of Central Andean Archeology

Mann, Charles C. 2005. *1491* New York: Alfred A. Knopf 64-65

A study of the Americas before Christopher Columbus

Secrets of Lost Empires: Inca. Dir. NOVA. DVD. WGBH Boston, 2006.

Documental on Inca technology accomplishments, includes the construction of last surviving Inca suspension bridge festival in Huarichiri.

Squier, Ephraim George, *PERU: Incidents of Travel and Exploration in the Land of the Incas* New York: Henry Holt and Co. 1877

Hyslop John, 1984. *The Inka Road System*

Academic study on Inca roads, includes maps and main locations of bridges.

Cieza de Leon. Pedro. 1959 *The Incas of Pedro Cieza de León* translated by Harriet de Onis. Oklahoma: University of Oklahoma Press.

Garcilaso de la Vega, El Inca. 1966. *Royal Commentaries of the Incas-Part One* translated with an introduction by Harold V. Livermore. San Antonio: University of Texas.

Moseley, Michael E. 1992. *The Incas and their Ancestors* New York: Thames and Hudson.

An authoritative survey of the great South American Civilizations.

Puente Colgante Inca Queswachaka. Prod. Instituto Nacional de Cultura. Perf. Proyecto Qhapag Ñan. 14 Mar. 2009. 10 May 2009

<[http://www.youtube.com/watch?v=NahjTDTdqRg&feature=channel\\_page](http://www.youtube.com/watch?v=NahjTDTdqRg&feature=channel_page)>.

A documental on the construction of the Queswashaka beidge in Cusco, Peru.

## 9. Appendix

### Appendix i: Experience Chart

Architecture	Agriculture	Transportation	Textiles

### Appendix ii

**Descriptive Essay rubric: The following rubric is based on IPA (Integrative Performance Assessment) workshop conducted by Bonnie Addair-Hauck (University of Pittsburg, 2004)**

	1	2	3	4
<b>Content</b>	Exceeds requirements; superior work	Meets all the requirements; well executed; above average work	Meets most of the requirements; average work	Incomplete; missing some elements
<b>Accuracy</b>	Very few/no errors; agreement, word order are correct	Some minor errors; correct use of grammar and vocabulary evident most of the time	Some errors; main idea is comprehensible; grammar and vocabulary are simple and limited	Frequent errors that limit comprehension; grammar and vocabulary limited
<b>Appearance</b>	Exceptionally neat and well organized; excellent appearance	Very well organized and neat; good appearance	Somewhat organized; average neatness and appearance	Lacking organization and neatness
<b>Comprehension</b>	Very clear and comprehensible; used appropriate grammatical forms to communicate ideas	Clearly comprehensible; some errors but ideas are well communicated	Mostly comprehensible; some parts unclear, but able to communicate the main idea	Somewhat comprehensible; some ideas distorted due to improper use of language
<b>Effort</b>	Exceeds requirements; shows great evidence of thoughtful input	Meets all requirements; shows good evidence of thoughtful input	Meets most requirements; shows some evidence of thoughtful input	Meets some requirements; minimal evidence of thoughtful input

### Appendix iii

#### PRESENTATION RUBRIC:

	1	2	3	4
<b>Content and required elements</b>	Required elements missing.	All but 1 element included.	All required elements included.	All elements and additional information included.
<b>Graphics and Relevance</b>	Graphics do not relate to the topic.	Some graphics relate to the topic.	All graphics are related and most make it easier to understand topic.	All graphics are related and make it easier to understand topic.
<b>Accuracy</b>	Inadequate/inaccurate use of basic structures and vocabulary.	Emerging use of basic language structures /vocabulary.	Emerging control of basic language structures/vocabulary.	Control of basic language structures/ vocabulary
<b>Attractiveness</b>	Messy or poorly designed.	Acceptably attractive though it a little bit messy.	Attractive in terms of design, layout and neatness.	Exceptionally attractive: design, layout and neatness.

### Appendix iv

#### El Baúl del Cronista (The Chroniclers' treasure chest) Rubric

	1	2	3	4
<b>Content and required elements</b>	Required elements missing.	All but 1 element included.	All required elements included.	All elements and additional information included.
<b>Props and Relevance</b>	No props or props do not relate to the topic.	Some props relate to the topic.	All props are related and most make it easier to understand topic.	All props are related and make it easier to understand topic.
<b>Accuracy</b>	Inadequate/inaccurate use of basic structures and vocabulary.	Emerging use of basic language structures /vocabulary.	Emerging control of basic language structures/vocabulary.	Control of basic language structures/ vocabulary
<b>Acting Skills</b>	Minimal body language, some facial expressions, back to the audience.	Basic body language such as posture, and facial expressions. Back to the audience at times.	Sound body language, physicalisation such as posture, gesture and facial expression. Facing the audience.	Excellent body language and physicalisation such as posture, gestures and facial expressions. Facing the audience.

## World Language National Standards:



A Collaborative Project of ACTFL, AATF, AATG, AATI, AATSP, ACL, ACTR, CLASS and NCJLT-ATJ

### Statement of Philosophy

Language and communication are at the heart of the human experience. The United States must educate students who are linguistically and culturally equipped to communicate successfully in a pluralistic American society and abroad. This imperative envisions a future in which ALL students will develop and maintain proficiency in English and at least one other language, modern or classical. Children who come to school from non-English backgrounds should also have opportunities to develop further proficiencies in their first language.

### COMMUNICATION

#### Communicate in Languages Other Than English

Standard 1.1: Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.

Standard 1.2: Students understand and interpret written and spoken language on a variety of topics.

Standard 1.3: Students present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.

## **CULTURES**

Gain Knowledge and Understanding of Other Cultures

Standard 2.1: Students demonstrate an understanding of the relationship between the practices and perspectives of the culture studied

Standard 2.2: Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied

## **CONNECTIONS**

Connect with Other Disciplines and Acquire Information

Standard 3.1: Students reinforce and further their knowledge of other disciplines through the foreign language

Standard 3.2: Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures

## **COMPARISONS**

Develop Insight into the Nature of Language and Culture

Standard 4.1: Students demonstrate understanding of the nature of language through comparisons of the language studied and their own

Standard 4.2: Students demonstrate understanding of the concept of culture through comparisons of the cultures studied and their own.

## **COMMUNITIES**

Participate in Multilingual Communities at Home & Around the World

Standard 5.1: Students use the language both within and beyond the school setting

Standard 5.2: Students show evidence of becoming life-long learners by using the language for personal enjoyment and enrichment.

## Fue una obra de avanzada ingeniería vial

Para los incas el Qhapaq Nan o Inka Nan (camino inca), fue un complejo sistema administrativo, de transportes y de comunicaciones, así como un medio para delimitar las cuatro divisiones básicas del Imperio.



Un camino principal salía de la capital, Cusco, a cada uno de los cuatro suyos.

- 1 El Chinchaysuyo que abarcaba Ecuador y el norte del Perú.
- 2 El Antisuyo que se extendía al este hasta la cordillera.
- 3 El Contisuyo que tomaba al oeste hasta la costa.
- 4 El Collasuyo que abarcaba el sur de Perú, parte de Chile y una pequeña franja de la Argentina.

### Los chasquis

Eran hombres entre los 18 y 25 años, que tras recorrer los caminos incas se detenían en cabañas situadas a 2 kilómetros de distancia. Cada vez que el chasqui recibía el correo en forma de mensaje u objeto, corría hasta la cabaña siguiente donde era sustituido por otro chasqui y así sucesivamente. Los chasquis cambiaban de turno cada 15 días.

Pitoto servía para anunciar la llegada



Llautos eran cintas que indicaban el lugar del que procedían.

Uncu eran túnicas de lana o algodón.

Fuente: John Hyslop "Qhapaqñan. El Sistema Vial Incaico", NC